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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,766	10/19/2001	Yasumasa Takao	215217US0	6675
22850	7590	01/11/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			RICKMAN, HOLLY C	
			ART UNIT	PAPER NUMBER
			1773	
DATE MAILED: 01/11/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,766

Applicant(s)

TAKAO ET AL.

Examiner

Holly Rickman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6,8-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7 and 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/27/05 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The rejection of claims 1-5, 7, and 10-19 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement (with respect to the limitations including “non-squarish”, particles that are “smooth”, and a “degree of circularity” of “about 1”) is withdrawn in view of the amendments to the claims.

4. Claims 1-5, 7, and 10-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

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relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original disclosure does not provide written description of the newly added limitation directed to "the surface roughness of the particles with a ratio of the square of perimeter to the projected area measured based on SEM photographs being about 1."

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. The rejection of claims 1-5, 7, and 10-19 under 35 U.S.C. 112, second paragraph, is withdrawn in view of the amendments to the claims.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5, 7, and 10-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Parent (US5190738).

The limitations set forth in claims 2-5, 10, 13 and 16 (for example "powder is manufactured in the presence of a combustion flame..." in claim 2) are process limitations in product claims and do not appear to be further limiting in so far as the structure of the product is concerned. Even though product claims are limited and defined by the process, determination of

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patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Bearing the above interpretation in mind, claim 1 requires an aluminum nitride filler powder comprising Al, O, and N, or Al and N, wherein the filler powder has a particle size ranging from 0.001-500 micron, with an average particle diameter of 1-100 micron, wherein the external shape of the particles is spherical with a ratio of long axis diameter to short axis diameter is about 1:1 and the surface roughness is about 1 (it is noted that this value has no units – the number appears to be determined by taking the ratio of the square of perimeter to the projected area based on SEM photographs).

Regarding these limitations, Parent teaches a process for producing unagglomerated single crystals of Aluminum Nitride via carbothermal reaction. The product AlN powder has a particle diameter between 10-100 micron, more preferably 10-60 micron (column 2, lines 48-50). Thus, the particle diameter limitation of claim 1 is met. Regarding the ratio of long axis diameter to short axis diameter, Parent teaches that the single crystals of AlN are "approximately spherical" (column 2, lines 59-61). As a "truly" spherical particle will have a short axis diameter to long axis diameter of 1:1, the examiner takes the position that "approximately spherical" in Parent means "approximately" or "about" spherical. Thus, the approximately spherical powder of Parent will have a short axis diameter to long axis

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diameter of "about" 1:1. Regarding the composition of the AlN powder required by claim 1.

Parent teaches that the following reaction is utilized to generate the AlN powder:



(column 3, lines 35-40). As is clearly shown, the final product of the Parent reaction is AlN, sodium, and carbon monoxide. Thus, the final product of Parent, AlN, reads on the instant claims, though it was made by another or materially different process.

In addition, the examiner takes the position that the structure taught by Parent inherently satisfies the newly added surface roughness limitation. The particles taught by Parent appear to be substantially the same as claimed in composition and shape. The disclosure of "approximately" spherical particles would have indicated to one of ordinary skill in the art that the particles would have a substantially smooth surface. Thus, in the absence of evidence to the contrary, the examiner contends that Parent would inherently satisfy the surface roughness limitation. It has been held that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC §102 or on prima facie obviousness under 35 USC §103, jointly or alternatively. *In re Best, Bolton, and Shaw*, 195 USPQ 430. (CCPA 1977).

Claims 2-5 further limit the process by which the AlN powder of claim 1 is formed. However, no evidence has been presented to show that the product produced by the process claimed is any different than that of the prior art. Thus, Parent anticipates the limitations of claim 2 for the reasons set forth above.

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The limitations of claim 7 are anticipated as set forth above for claim 1. It is noted that Parent teaches the use of the AIN as a filler material in a polymer binder (column 2, lines 10-18).

9. Claims 1-5, 7, and 10-20 rejected under 35 U.S.C. 102(b) as being anticipated by Ochiai et al. (US 5283542).

The limitations of claims 2-5, 10, 13, and 16 are process limitations in product claims and do not appear to be further limiting in so far as the structure of the product is concerned. Even though product claims are limited and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Regarding claim 1, Ochiai teaches a composite material that comprises a polymer matrix and a spherical AIN filler powder having an average particle diameter from 20-90 micron (column 3, lines 50-69). The AIN particles are described as spherical with a long axis/short axis diameter ratio of 1:1.

In addition, the examiner takes the position that the structure taught by Ochiai inherently satisfies the newly added surface roughness limitation. The particles taught by Ochiai appear to be substantially the same as claimed in composition and shape. The disclosure of spherical particles would have indicated to one of ordinary skill in the art that the particles would have a substantially smooth surface. Thus, in the absence of evidence to the contrary, the examiner contends that Parent would inherently satisfy the surface roughness limitation. It has been held

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that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC §102 or on prima facie obviousness under 35 USC §103, jointly or alternatively. *In re Best, Bolton, and Shaw*, 195 USPQ 430. (CCPA 1977).

Claims 2-5, 7, and 10-20 are met as set forth above for claim 1.

Response to Arguments

10. Applicant's arguments filed 9/27/05 have been fully considered but they are not persuasive.

Applicant argues that neither Parent nor Ochiai meet the presently claimed shape and morphology requirements. Applicant provides data comparing the "elongation percentage" and "roughness percentage" of an ideal circle and commercially available powder and a powder described in Nadkarni (US 5096860). Firstly, it is noted that it is not clear to the examiner that "elongation percentage" and "roughness percentage" are the same as the ratio of long axis diameter to short axis diameter and the "surface roughness" that are claimed. Even if they are the same parameters, the data shown is not a comparison of the claimed invention with the *closest prior art to Ochiai and Parent*. Instead, Applicant's comparative data represents Nadkarni and a "commercially available powder." These materials appear to be different from the applied prior art.

Applicant maintains that “roughness percentage” is inherently described in the specification and a website is cited as an example. The examiner notes that the claims describe only “surface roughness” and the particulars of how it is measured. Thus, the terminology “roughness percentage” is inconsistent with what is claimed. Furthermore, there is no written description of the newly added limitation directed to surface roughness. Applicant maintains that Fig 2 of the specification inherently provides support for the aforementioned limitation. The examiner respectfully disagrees. There is no evidence of record to support this conclusion. The website Applicant cited as an example appears to have an effective date of 9/21/2005. Therefore, it is not clear how this citation establishes the originally filed disclosure inherently supports the newly added limitations of claim 1.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Holly Rickman", with a stylized flourish at the end.

Holly Rickman
Primary Examiner
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